

Form PTO-1449		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE			ATTY. DOCKET NO. MI22-1738		SERIAL NO.		1c978 U.S. PTO 09/887049 06/21/01
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U.S. PATENT DOCUMENTS							
*Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate	
JMR	AA	4,933,743	06/90	Thomas et al.	257	742	08/14/1989
JMR	AB	3,982,268	09/76	Anthony et al.	257	45	03/14/1978
JMR	AC	5,618,752	04/97	Gaul	438	624	06/05/1995
JMR	AD	4,394,712	07/83	Anthony	361	779	03/18/1981
JMR	AE	5,767,001	06/98	Bertagnolli et al.	438	455	05/02/1994
JMR	AF	5,807,783	09/98	Gaul et al.	438	406	10/07/1996
JMR	AG	4,977,439	12/90	Esquivel et al.	257	621	04/03/1989
JMR	AH	5,852,320	12/98	Ichihashi	257	419	08/13/1996
JMR	AI	5,811,868	09/98	Bertin et al.	257	516	12/00/1996
JMR	AJ	5,753,529	05/98	Chang et al.	438	118	05/19/1995
JMR	AK	5,717,247	02/98	Koh et al.	257	686	11/5/1996

  

FOREIGN PATENT DOCUMENTS							
Document Number	Date	Country	Class	Subclass	Translation		
					Yes	No	
JMR AL	4-133472	05/92	Japan		X		
AM							
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OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)			
JMR	AR		V. Lehmann, "The Physics of Macropore Formation in Low Doped N-Type Silicon," J. Electrochem. Soc., Volume 140, No. 10, October 1993, pp. 2836-2843.
JMR	AS		K.P. Muller et al., "Trench Storage Node Technology for Gigabit DRAM Generations," Technical Digest of International Electron Devices Meeting, December 8-11, 1996, pp. 507-510.
JMR	AT		H. Horie et al., "Novel High Aspect Ratio Plug for Logic/DRAM LSIs Using Polysilicon-Aluminum Substitute (PAS)," Technical Digest of International Electron Devices Meeting, December 8-11, 1996, pp. 946-8.

  

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*Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate		
JUN	AA	5,699,291	12/97	Tsunemine	365	149	08/01/1996	
JUN	AB	5,682,062	10/97	Gaul	257	684	06/05/1995	
JUN	AC	5,646,067	07/97	Gaul	438	458	06/05/1995	
JUN	AD	5,640,049	06/97	Rostoker et al.	257	758	11/30/1995	
JUN	AE	5,599,744	02/97	Koh et al.	338	660	02/06/1995	
JUN	AF	5,587,119	12/96	White	264	104	05/06/1995	
JUN	AG	5,482,873	01/96	Yang	438	365	04/14/1995	
JUN	AH	5,426,072	06/95	Finnila	438	107	01/21/1993	
JUN	AI	5,317,197	05/94	Roberts	257	407	04/30/1993	
JUN	AJ	5,166,097	11/92	Tanielian	438	667	11/26/1990	
JUN	AK	4,939,568	07/90	Kato et al.	257	684	03/27/1989	
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						Yes	No	
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JUN	AR		M. Thomas et al., "VLSI Multilevel Micro-Coaxial Interconnects for High Speed Devices,"					
			Fairchild Research Center, IEEE 1990, pp. 3.5.1-3.5.					
JUN	AS		T. Ohba et al., "Evaluation on Selective Deposition of CVD W Films by Measurement of Surface Temperature," Tungsten and Other Refractory Metals for					
			VLSI Applications II, Proceedings of 1986 Workshop, pp. 59-66, 1987 by Materials Research Society.					
JUN	AT		R.F. Foster et al., "High Rate Low-Temperature Selective Tungsten," ibid. 1988 Workshop, pp. 69-72.					
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JUR	AA	4,870,470	09/89	Bass Jr., et al.	257	384	10/16/1987		
JUR	AB	4,610,077	09/89	Minahan et al.	438	68	02/30/1984		
JUR	AC	4,595,428	06/86	Anthony et al.	438	468	01/03/1984		
JUR	AD	6,143,616	11/00	Geusic et al. (Appn. SN: 08/917,449)	438	389	02/22/1997		
JUR	AE	6,187,677	02/01	Ahn Appn. SN: 08/917,443	438	667	08/22/1997		
JUR	AF	5,869,893	02/99	Koseki et al.	257	723	03/12/1997		
JUR	AG	5,698,867	12/97	Bauer et al.	257	138	03/24/1995		
JUR	AH	5,661,344	08/97	Havemann et al.	257	758	06/07/1995		
JUR	AI	5,614,743	03/97	Aizawa et al.	257	276	07/21/1995		
JUR	AJ	5,312,765	05/94	Kamber	438	59	05/11/1993		
JUR	AK	6,001,538	12/99	Chen et al.	430	316	04/6/1998		
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OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)									
JUR	AR		T. Ohba et al., "Selective Chemical Deposition of Tungsten Using Silane and Polysilane Reductions," <i>ibid</i> , Workshop, pp. 17-25, 1989.						
JUR	AS		Gutman et al., "Low and High Dielectric Constant Thin Films for Integrated Circuit Applications", Extended Abstract, presented to the Advanced Metallization and Interconnect Systems for VLSI Applications in 1996, Oct. 3-5, 1996, Boston, MA.						
JUR	AT		Sekine et al., "A New High-Density Plasma Etching System Using a Dipole-Ring Magnet," <i>Jpn. J. Appl. Phys.</i> , 11/94, Pt. I, No. 11.						
EXAMINER <i>Guo J. Mahdian</i>					DATE CONSIDERED 08/08/2002				
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U.S. PATENT DOCUMENTS							
*Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate	
JUN	AA	5,930,625	07/99	Lin et al.	438	253	04/24/1998
JUN	AB	5,750,436	05/98	Yamaga et al.	438	558	01/07/1995
JUN	AC	4,419,150	12/83	Sociof	438	337	09/16/1988
JUN	AD	5,424,245	06/95	Gurtler et al.	438	107	01/04/1994
JUN	AE	5,841,197	11/98	Adamic, Jr.	257	777	09/05/1996
JUN	AF	5,990,562	11/99	Vallett	257	774	03/05/1997
JUN	AG	6,037,244	03/00	Gardner et al.	438	580	03/19/1997
JUN	AH	5,933,758	08/99	Jain	438	687	05/12/1997
JUN	AI	5,539,227	07/96	Nakano	257	276	08/02/1995
JUN	AJ	5,635,423	07/97	Huang et al.	438	638	10/11/1994
JUN	AK	6,037,248	03/00	Ahn	438	619	06/13/1997

  

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JUN	AR		K.J. Taylor et al., "Polymers for high performance interconnects," Materials for Advanced Metallization,
			1994 Symp. On VLSI Techn. Digest of technical Papers, pp. 60-63.
	AS		
	AT		

  

EXAMINER <i>Julio G. Maldonado</i>	DATE CONSIDERED 08/08/2002
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JWL	AA	5,651,855	07/97	Dennison et al.	438	628	02/01/1996	
JWL	AB	4,440,973	04/84	Hawkins	174	107	03/17/1982	
JWL	AC	4,776,087	10/88	Cronin et al.	29	828	02/27/1987	
JWL	AD	5,148,260	09/92	Inoue et al.	257	762	09/07/1990	
JWL	AE	5,528,080	06/96	Goldstein	257	741	12/13/1994	
JWL	AF	5,539,256	07/96	Mikagi	887	763	08/23/1995	
JWL	AG	5,608,237	03/97	Aizawa et al.	257	132	03/13/1995	
JWL	AH	5,817,572	10/98	Chiang et al.	438	624	12/18/1996	
JWL	AI	5,827,775	10/98	Miles et al.	438	622	11/12/1997	
JWL	AJ	5,596,230	01/97	Hong	257	758	01/04/1996	
JWL	AK	5,858,877	01/99	Dennison et al.	438	700	01/21/1997	
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U.S. PATENT DOCUMENTS							
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<i>KEN</i>	AA	Appn. SN: 09/095,774		Ahn (Closed/Abandoned)	257	499	06/10/98
<i>SPR</i>	AB	Appn. SN: 09/118,346		Geusic et al.	257	734	07/17/98
	AC						
	AD						
	AE						
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	AG						
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